

SOUTH DAKOTA STATEWIDE FISHERIES SURVEY

2102-F-21-R-48

Name: Potts Dam **County(ies):** Potter
Legal Description: T117N-R74W-Sec. 20 & 21 **GPS:** 44°55'44.26"N 99°46'42.25"W
Location from nearest town: 8 miles east and 6 miles south of Gettysburg

Date of present survey: June 22-24, 2015 (netting); September 16, 2015 (electrofishing)
Date of last survey: June 24-26, 2013 (netting); September 30, 2013 (electrofishing)
Most recent lake management plan: F-21-R-40 (January 1, 2008 to December 31, 2012)
Management classification: Warmwater Semi-Permanent

Primary Game Species	Secondary and Other Species
Largemouth Bass	Yellow Perch
Bluegill	Black Crappie
	Black Bullhead

PHYSICAL DATA

Surface Area: 58 acres **Watershed:** 6,400 acres
Maximum Depth: 15 feet **Mean Depth:** 8 feet
Lake elevation at time of survey (field observations): Full
Contour map: Yes **Date:** 1985

Ownership of lake and adjacent lakeshore properties:

Potts Dam was created in 1938 when the Works Progress Administration (WPA) constructed an earthen dam on the upper end of Okobojo Creek. To allow for the construction of the dam and flooding that would create the lake, three public use easements were granted to the State of South Dakota for the lake and a 66-foot strip of land above the high water contour. Currently, approximately 80% of Potts Dam is owned by the South Dakota Department of Game, Fish and Parks and lies within a 350 Game Production Area (GPA).

Watershed condition with percentages of land use types:

The watershed of Potts Dam is relatively small at approximately 10 square miles or about 6,400 acres. The immediate shoreline of Potts Dam is native grasses within the GPA. The remainder of the watershed is 90% cultivated agricultural land and 10% farmsteads, roads, pasture or hayland, and treebelts.

Fishing access:

There is good fishing access to Potts Dam through a good access road on the south side of the lake. There is a new concrete boat ramp for water access on the southwest side of the lake. Shore fishing may be hindered somewhat during the summer due to both submergent and emergent vegetation.

Condition of all structures (i.e. spillway, boat ramps, level regulators, etc.):

The new boat ramp at Potts Dam has been installed. The vault toilet is in good condition.

Field observations of aquatic vegetation condition:

Cattails and rushes are the main emergent vegetation species found around the shoreline of Potts Dam. The submergent vegetation is comprised of a mixture that includes but not limited to sago pondweed, clasping leaf pondweed, common milfoil, coontail, and floating leaf pondweed. They were found around most of the shoreline out to a depth of between 6-9 feet of water.

CHEMICAL DATA

Field observations of water quality and pollution problems:

No pollution problems were evident during the current survey. Water clarity was good with a secchi disc reading of 2.5 feet. Other water quality characteristics were measured in the field on June 22, 2015, using a HACH water quality kit and a Hanna multiparameter meter. Results are found in Table 1.

Presence of a thermocline and depth from surface: No

Station for water chemistry located on attached map: Yes

Table 1. Water chemistry results from Potts Dam, Potter County, June 22, 2015.

Station	Depth (ft)	Temp (F)	DO (ppm)	CO2 (ppm)	ALK (mg/L)	HRD (mg/L)	pH	Cond. (µS/cm)	TDS (ppm)	Sal.	ORP	Secchi (ft)
A	Surface	71.9	4.65	50.4	210	698	8.30	1956	978	1.00	-265.0	2.5
A	13.5	71.1	2.98	52.4	283	708	8.21	1929	966	0.98	-258.3	

BIOLOGICAL DATA

Methods:

Potts Dam was sampled on June 22-24, 2015, with ten overnight trap net sets. The trap nets have 3ft x 5ft frames, 60ft leads, and ¾ inch knotted mesh. No experimental gill nets were used during the current survey. On the evening of September 16, 2015, Potts Dam was electrofished for 60 minutes (6-ten minute transects) to sample the largemouth bass population. The boat was set up with 120 pulses per second of DC current at 170 volts with around 18 amps to electrofish the lake that had a conductivity of 1179 µS/cm with a water temperature of 72.0°F. Fish indices and statistics were completed using Winfin.

Results and Discussion:

Trap Net Catch

Table 2. Total catch of ten, overnight ¾-inch frame nets at Potts Dam, Potter County, June 22-24, 2015.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Black Bullhead	17,952	99.9	1,795.2	± 921.4	154.7	6	0	88
Yellow Perch	19	0.1	1.9	± 1.4	10.6	47	6	95
Bluegill	1	0.0	0.1	± 0.1	29.7	--	--	140

* Sixteen year mean (1971, 1973, 1977, 1980, 1982, 1985, 1986, 1990, 1994, 1997, 2000, 2003, 2006, 2008, 2011, 2013)

Electrofishing Catch

Table 3. Total catch from six ten-minute runs of fall nighttime electrofishing on Potts Dam, Potter County, September 16, 2015.

Species	#	%	CPUE	80% C.I.	Mean CPUE*	PSD	RSD-P	Mean Wr
Largemouth Bass	46	100	46.0	± 23.6	20.8	0	0	143

* Eight year mean (1994, 1997, 2000, 2003, 2006, 2008, 2011, 2013)

Black Bullhead

Black bullheads continue to dominate the fish community of Potts Dam. Things has started to turn the corner during the survey of 2011, but a winterkill during the winter of 2011-2013 took care of all the game fish species and only left bullheads. The CPUE of 1795.2 is at an all-time survey high for Potts Dam. It is well above the 60.7 from the 2013 survey (Table 6) as well as the 154.7 sixteen year mean (Table 2). The population is dominated by very small young fish. Figures 1 through 6 illustrate the length frequency histograms for the fish sampled over the past six surveys and it can be seen that the bullhead population has always been dominated by small fish as a result of overpopulation. Condition is fine yet with a mean Wr of 88. Some manual removal and an aggressive predator stocking program needs to be done to right this ship.

Figure 1. Length frequency histogram for black bullhead sampled from Potts Dam, Potter County, 2015.

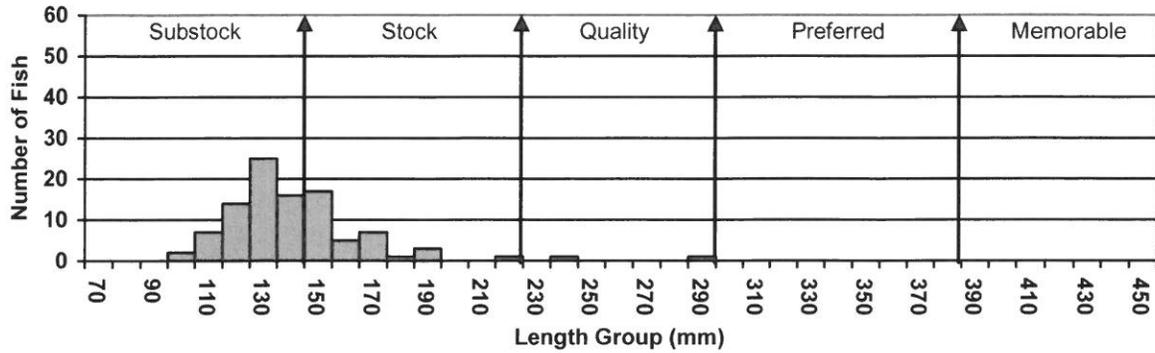


Figure 2. Length frequency histogram for black bullhead sampled from Potts Dam, Potter County, 2013.

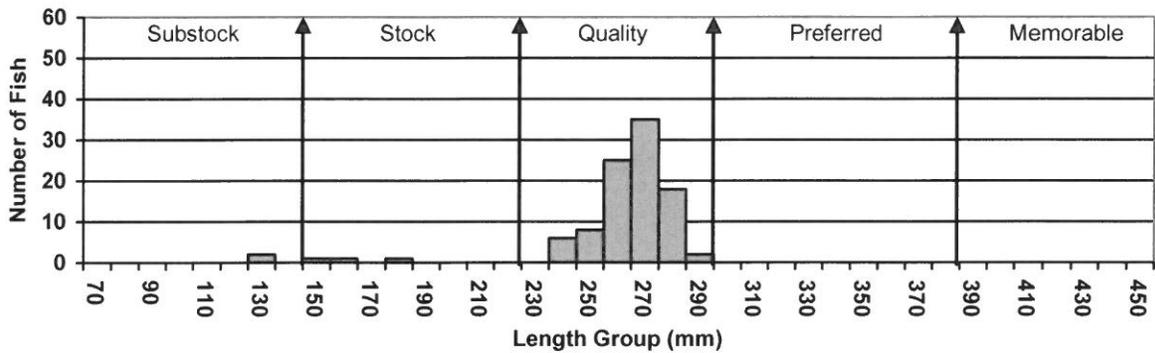


Figure 3. Length frequency histogram for black bullhead sampled from Potts Dam, Potter County, 2011.

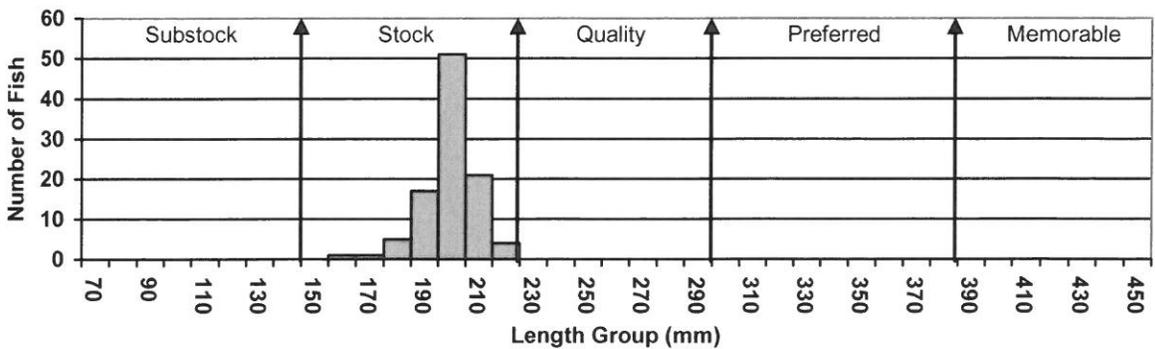


Figure 4. Length frequency histogram for black bullhead sampled from Potts Dam, Potter County, 2008.

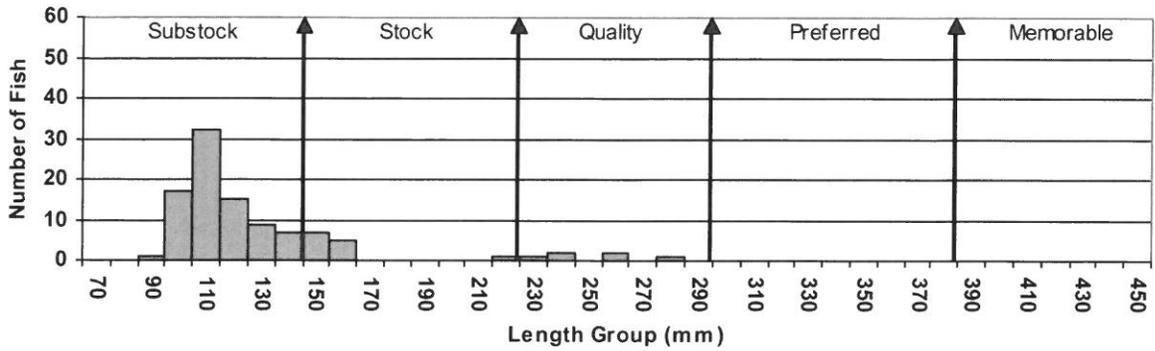


Figure 5. Length frequency histogram for black bullhead sampled from Potts Dam, Potter County, 2006.

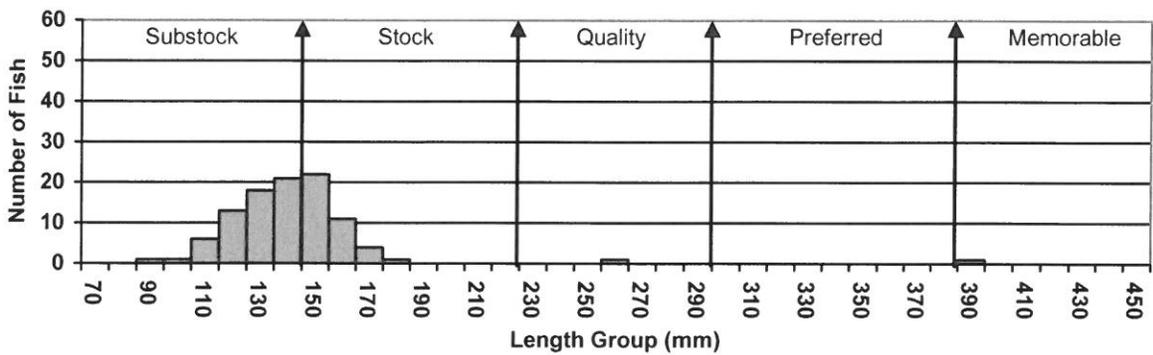
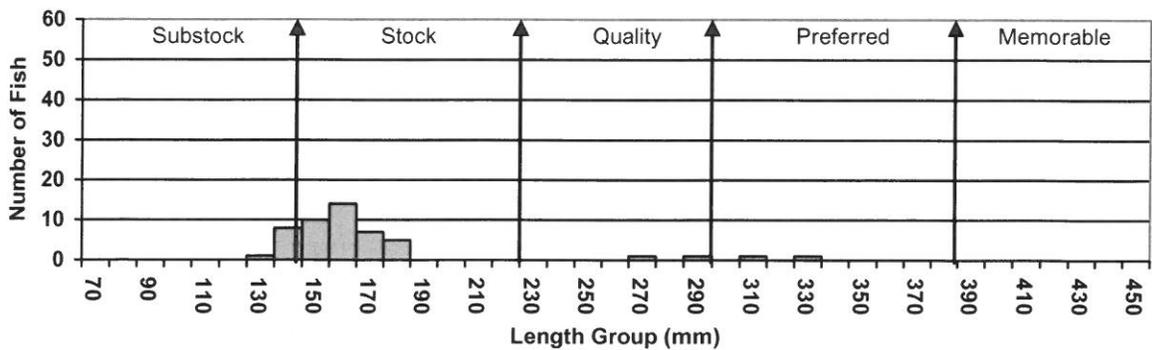


Figure 6. Length frequency histogram for black bullhead sampled from Potts Dam, Potter County, 2003.



Largemouth Bass

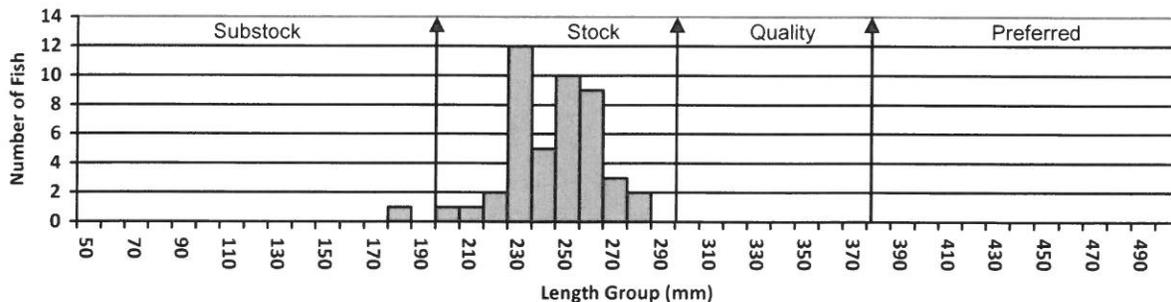
Largemouth bass appear to be finally getting a start back after the last winterkill. An aggressive stocking program was started in 2013 and continued through this summer (Table 5). The fall electrofishing CPUE of 46.0 fish per hour is above the 0 from the 2013 survey (Table 6) as well as the 20.8 eight year mean (Table 3). The misleading part is that all the fish sampled were age 1 fish that were a result of stockings that were done last year. Growth is good so far with means well above statewide, regional and SLI means (Table 4). Condition is also good with a mean Wr of 143. This population will continue to be monitored and more bass stocked until surveys show bullhead numbers down and other species on the increase.

Table 4. Average back-calculated lengths (mm) for each age class of largemouth bass sampled from Potts Dam, Potter County, 2015.

Year Class	Age	N	Back-calculated Age
2014	1	46	137
All Classes		46	137
Statewide Mean			96
Region II Mean			105
SLI* Mean			99

* Small Lakes and Impoundments

Figure 7. Length frequency histogram for largemouth bass sampled from Potts Dam, Potter County, 2015.



Other species

Yellow perch and bluegill were the only other species sampled this survey. Only 1 bluegill was collected and we more than likely a result from the stocking that was done this summer. Nineteen yellow perch were sampled for a CPUE of 1.9, which is above the 0 from 2013. Not totally sure where these came from as none have been stocked, so they must be a small remnant population that survived that last winterkill. Hopefully they will continue to build in numbers so anglers can have a desirable species to fish for.

Black crappie, northern pike, channel catfish, and white sucker were the species not sampled that have been in surveys past (Table 6).

Table 5. Stocking records for the last ten years for Potts Dam, Potter County.

Year	Number	Species	Size
2007	185	Largemouth Bass	Juvenile
2008	50	Largemouth Bass	Adult
2008	2,720	Largemouth Bass	Fingerling
2008	56	Black Crappie	Adult
2009	490	Largemouth Bass	Juvenile
2013	1,750	Largemouth Bass	Fingerling
2014	1,000	Largemouth Bass	Large Fingerling
2014	1,260	Largemouth Bass	Fingerling
2014	250	Bluegill	Adult
2015	292	Largemouth Bass	Juvenile
2015	450	Bluegill	Adult

RECOMMENDATIONS

1. Resurvey in 2018 to monitor the fish populations and to check up on the fish stockings after the fish die-off.
2. Continue to stock largemouth bass to get catch rates of at least 50/hour of electrofishing.
3. Continue to stock panfish species to rebuild the populations after the winterkill and to add diversity to the system.

Table 6. Gill net (GN), trap net (TN), and electrofishing (EF) CPUE for all fish species sampled in Potts Dam, Potter County.

Species	1971	1973	1977	1980	1982	1984	1985	1990	1994	1997	2000	2003	2006	2008	2011	2013	2015
BLB (GN)	--	--	--	57.0	--	--	--	--	--	--	--	--	--	--	--	--	--
BLB (TN)	21.6	4.8	808.9	76.6	132.5	769.0	253.8	41.1	1.8	0.1	2.4	4.9	91.0	66.3	139.6	60.7	1795.2
BLC (GN)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLC (TN)	--	--	--	--	--	--	--	--	--	2.5	16.6	12.2	--	--	0.1	--	--
YEP (GN)	--	--	--	2.0	--	--	--	--	--	--	--	--	--	--	--	--	--
YEP (TN)	3.9	17.8	0.1	9.5	--	7.9	4.3	7.8	10.6	6.0	13.5	8.3	0.2	26.4	53.8	--	1.9
LMB (EF)	--	--	--	--	--	--	--	--	58.0	42.0	87.0	81.0	0.0	39.0	97.0	0.0	46.0
LMB (GN)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
LMB (TN)	--	--	--	0.4	0.1	0.1	--	--	--	--	1.8	--	--	--	--	--	--
NOP (GN)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NOP (TN)	0.8	3.2	2.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CCF (GN)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
CCF (TN)	--	--	--	--	0.3	0.1	--	--	--	--	--	--	--	--	--	--	--
WHS (GN)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
WHS (TN)	--	0.2	2.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLG (GN)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
BLG (TN)	--	0.2	--	17.4	63.8	232.0	74.5	23.5	10.6	4.1	34.3	15.4	--	--	--	--	0.1

BLB-Black Bullhead, BLC-Black Crappie, YEP-Yellow Perch, LMB-Largemouth Bass, NOP-Northern Pike, CCF-Channel Catfish, WHS-White Sucker, BLG-Bluegill